



2022 Brandywine Watershed Wetland Health Report Card



About the Watershed



DELAWARE DEPARTMENT OF
NATURAL RESOURCES AND
ENVIRONMENTAL CONTROL

The Delaware portion of Brandywine watershed is located within New Castle County, where it encompasses 72,969 acres (114 square miles) of land. It is composed of 8 sub-watersheds, and the entire Brandywine watershed extends farther north into Pennsylvania. However, this report card only covers the Delaware portions. The Christina River watershed borders the Brandywine watershed to the south, and much of this watershed is developed.

Based on 2017 maps, the Brandywine watershed contained 2,805 acres of wetlands. Historically, a quarter of its original wetland acreage was destroyed, mostly due to development. The watershed also contained some Category One wetlands, which are rare, unique, freshwater wetland types in Delaware. Wetland acreage and health is directly related to the amount of natural services the people of Delaware can benefit from.

Overall, the Brandywine watershed's wetlands received a C+ for their health score. Common wetland stressors were fill, structures interrupting waterflow, and invasive species, development, roads, and mowing in the surrounding landscape.



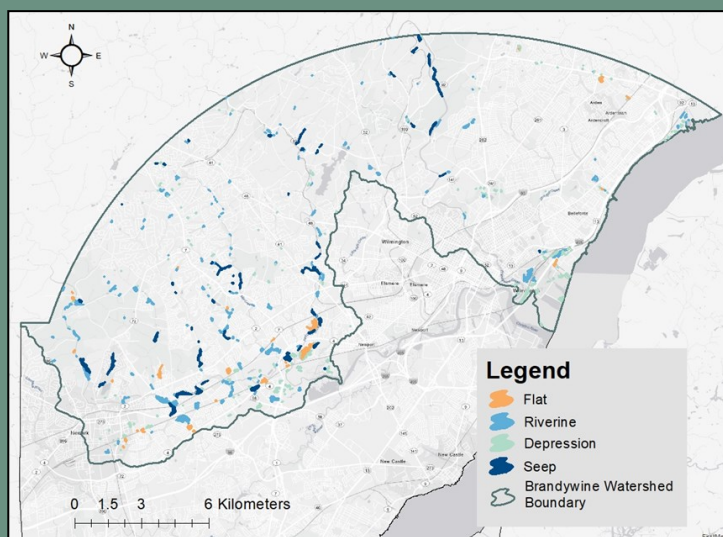
A flat wetland in the Brandywine Watershed

How Are Wetlands Graded?

There are many different types of wetlands in Delaware, and to accurately grade their health, they are broken into two categories based on how they receive their water supply: tidal wetlands and non-tidal wetlands.

In the Brandywine watershed, only non-tidal wetlands were assessed. The watershed has very few tidal wetlands, and those that were present occurred only in a couple of small areas. Non-tidal wetlands include riverine, flat and depression wetlands. They receive their water from rain, snow and underground springs, as well as overland flow and overbank flooding. The Delaware Rapid Assessment Procedure (DERAP) is used to grade them. This procedure looks for a variety of environmental indicators, such as disturbances to the plant community or the natural flow of water, to assess the general condition of a wetland site.

In this method, biologists look for and tally living and non-living stressors (also called environmental indicators) that prevent a wetland from functioning properly. **Throughout the Brandywine watershed, a total of 68 sites were assessed and graded in 2019.**



Wetland types in the Brandywine watershed

Environmental Indicators of Wetland Health

Wetland Habitat



Habitat indicators that cause a wetland's grade to decline include: forest harvesting, mowing, farming or grazing of the land, invasive species, and roads through the wetland.

The most common stressors to habitat in this watershed were nutrient indicator species and invasive species, such as Multiflora rose or Japanese stiltgrass.

Wetland Hydrology



Changes to water movement can cause a wetland's grade to decline. Indicators include: ditching, stream alterations, dams, stormwater inputs, and filling or excavation.

The most common stressors to hydrology in this watershed were fill and weirs, dams, and roads.

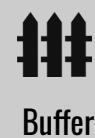
Buffer



A buffer is a zone of land just outside of the wetland that has the ability to protect a wetland from disturbances occurring in the surrounding upland landscape.

The most common stressors in the buffer area in this watershed were mowing, roads, and development of surrounding landscape, as well as channelized streams or ditches.

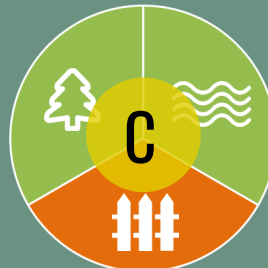
Grade by Wetland Type



Riverine Wetlands

Riverine wetlands occur along streams or rivers and provide storage for floodwaters and groundwater. The water that moves into these wetlands is cleaned before it moves downstream. They also form corridors of valuable wildlife habitat.

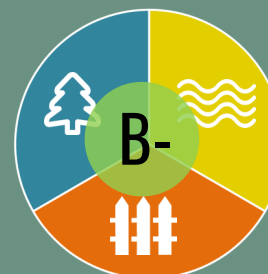
Common Problems: Invasive species, weir/dams/roads, stormwater inputs, fill, mowing, and development in surrounding landscape



Flat Wetlands

Flat wetlands are typically located at the upper reaches of the watershed. They are seasonally wet and often appear dry on the surface. They absorb precipitation and filter water slowly into streams and groundwaters.

Common Problems: Invasive species, ditching, fill, forest harvesting, mowing, roads, and development in surrounding landscape



Depression Wetlands

Depressions are isolated shallow pools of water that occur in low lying areas. They are seasonally wet and provide critical habitat for amphibians like frogs and salamanders.

Common Problems: Invasive species, nutrient indicator species, weir/dams/roads, and development in surrounding landscape



Seep Wetlands — Category One

Seeps or spring seeps are small wetlands typically found in sloping terrains. Groundwater reaches the surface through a distinct hole which shallow, broad flows move outward and create a saturated zone or wetland.

Common Problems: Invasive species, fill, weir/dams/roads, mowing, roads, and development in surrounding landscape



Did You Know?

You can find out more information about Delaware's wetlands by visiting: de.gov/delawarewetlands

The Brandywine Watershed's Wetlands Need Your Help!

What you can do:

Protecting and maintaining buffers around your wetlands. Buffers are natural planted strips along or around wetlands that can help wetlands stay in good health. It's best to not mow right up to the stream edge and to not clear the understory. For more information about buffers, please visit:

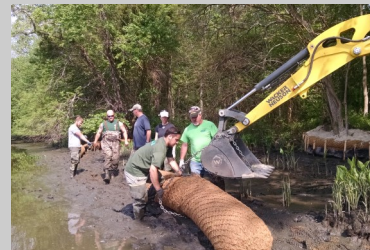
wmap.blogs.delaware.gov/2019/12/10/grass-and-forest-riparian-buffers/.

Preserving or restoring wetlands on your land. Nearly half the wetlands in this watershed were privately owned. This means we need your help in maintaining and improving our wetlands and the natural benefits they provide. To find out about restoration options, please visit: wetlandswork.org.

Utilize Best Management Practices (BMP's) in urban and suburban settings. BMPs can be used to limit effects of non-point source pollution coming from yards, driveways and roads. This can be done through changing your fertilizer habits, installing rain barrels or gardens, or planting native plants in your yard. de.gov/nps

Managing invasive species on your property by removing and replacing them with Delaware natives. Allow native plants to grow and thrive alongside wetlands, rivers and streams for cleaner water and erosion protection. For a list of Delaware's invasive plant species please visit: delawareinvasives.net

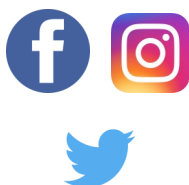
Supporting better wetland protection by contacting your local decision makers. Activities in non-tidal wetlands are not regulated by the state of Delaware, and every additional wetland filled or destroyed leads to less clean water, less wildlife habitat, and less flood protection for us all. de.gov/wetlandprotectionguidebook



Please visit de.gov/delawarewetlands to view the entire report and learn more about the assessment methods.

Delaware Department of Natural Resources and Environmental Control Division of Watershed Stewardship 302-739-9939

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